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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,171	09/28/2001	Katsuyuki Yamada	65988 CCD	5507

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COOPER & DUNHAM LLP
1185 Ave. of the Americas
New York, NY 10036

EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
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1795

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10/31/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/966,171	Applicant(s) YAMADA ET AL.	
	Examiner Martin J. Angebrannndt	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/13/07.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-10,12-14,17-25 and 27-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-10,12-14,17-25 and 27-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The response of the applicant has been read and given careful consideration. Responses to the arguments of the applicant are presented after the first rejection to which they are directed.
2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4,6-8,10,12,14,33 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshinari et al. '913, in view of Ando et al. '543 and Hisotomi et al. WO 99/38168.

Yoshinari et al. '913 in example 1 teaches a 0.6 mm (DVD) substrate with a track pitch of 1.2 microns, a groove depths of 65 nm and width of 0.6 microns, overcoated with 170 nm of ZnS-SiO₂, 2 nm of Cr₂O₃, a Ge₂Sb₂Te₅ recording layer, 2 nm of Cr₂O₃, 20 nm of ZnS-SiO₂ and 200 nm of Al- 1.7%Cr reflective layer and the UV recording layer, which is used with a 634 nm laser and a relative linear velocity of 8.2 m/s. (12/55-14/7). The maximum linear velocity is preferred to be between 6.8 and 15 m/s (10/7-17).

Ando et al. '543 disclose GeTeSb phase change optical recording media (RAM) (8/53-58). The lead-in area is disclosed as containing embossed information including linear velocity upon recording and erasure. (10/60-64)

Hisotomi et al. WO 99/38168 disclose GeTeSb phase change optical recording media (RAM) (page 6). The lead-in area is disclosed as containing embossed information including linear velocity upon recording and erasure. (paragraph bridging pages 7-8)

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It would have been obvious to modify the cited example of Yoshinari et al. '913 by including the various performance characteristics, such a optimum or uppermost recroding velocities in the lead in area of the optical disc so that the disc is used under improper conditions as discussed by described Ando et al. '543 in column 8 and Hisotomi et al. WO 99/38168 on pages 6-8 as this is considered conventional to provide this information to the readout/recording system. The position of the examiner is that the optimum or maximum recording linear velocities are provided in the lead in area and that the media operating in the range of 6.8 to 12 m/s would inherently have uppermost recrystallization velocities in the 12-24 m/s range for at least some specific conditions of laser power and wavelength.

The previous rejection sdhad relies upon references which used slower responding media. The applicant argues that 16X, 20X and 24X recording velocities, but the specification also teaches example 2, which has a disloctaiton velocity of 14.4 m/s and a maximum recording velocity of 8.44 m/s. Furthermore the claims fail to specify the conditions for the determination of the uppermost recrystalization velocity. Clearly this leaves the claims embracing a variety of conditions for this, which allows the rejection of the claims. This position is supported by the prepub of the instant specification at [0018] which states that the dislocation velocity is dependent upon the track pitch, laser wavelgnth, NA and laser power.

4. Claims 1-4,6-8,10,12-14,33 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuda et al. '788, in view of Ando et al. '543 and Hisotomi et al. WO 99/38168.

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Yasuda et al. '788 teach in example 5, a recording medium with a pitch of 0.9 microns and operating at 10 m/s. The recording medium structure is a 20 nm Al film, a ZnS-SiO₂ layer, a SiN film. A GeTeSbN recording layer, a SiN layer, a ZnS-SiO₂ layer and a Au-Co alloy layer and the second recording laminate (31/50-32/55). The recording layer compositions can be AgInSbTe recording layers and may have additives including Ga and the like (12/16-50). The recording medium substrate can be 0.3 to 1.2 mm thick, and is grooved. (15/30-46). See also example 4, which operates at 10 m/s. (30/50-31/46). The crystallization improvement layers are disclosed including Si, SiC and the like (24/46-56).

It would have been obvious to modify the cited examples of Yasuda et al. '788 by including the various performance characteristics, such as optimum or uppermost recording velocities in the lead in area of the optical disc so that the disc is used under improper conditions as discussed by described Ando et al. '543 in column 8 and Hisotomi et al. WO 99/38168 on pages 6-8 as this is considered conventional to provide this information to the readout/recording system. The position of the examiner is that the optimum or maximum recording linear velocities are provided in the lead in area and that the media operating at 10 m/s would inherently have uppermost recrystallization velocities in the 12-24 m/s range for at least some specific conditions of laser power and wavelength.

5. Claims 1-4,6-8,10,12-14,33 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uno et al. '135, in view of Ando et al. '543 and Hisotomi et al. WO 99/38168.

Uno et al. '135 teach in example 1, a recording medium with a pitch of 1.20 microns, groove widths of 0.6 microns, operating at 12 m/s. The recording medium structure is Au layer, a ZnS-SiO₂ layer, a SiC-SiN layer, a GeTeSb recording layer, a SiC-SiN layer (13-21-14/51).

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Useful optical recording layers include GeSbTe, AgInSbTe, and the like (8/7-40). Media 1,8 and 11 in tables 1 and 2 have the best performance at 12 m/s.

It would have been obvious to modify the cited examples of Yasuda et al. '788 by including the various performance characteristics, such a optimum or uppermost recording velocities in the lead in area of the optical disc so that the disc is used under improper conditions as discussed by described Ando et al. '543 in column 8 and Hisotomi et al. WO 99/38168 on pages 6-8 as this is considered conventional to provide this information to the readout/recording system. The position of the examiner is that the optimum or maximum recording linear velocities are provided in the lead in area and that the media operating at 12 m/s would inherently have uppermost recrystallization velocities in the 12-24 m/s range for at least some specific conditions of laser power and wavelength.

6. Claims 1-4,6-10,12-14,17-25 and 27-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuda et al. '788 or Uno et al. '135, in view of Ando et al. '543 and Hisotomi et al. WO 99/38168, further in view of Nobukuni et al. EP 1056077.

Nobukuni et al. EP 1056077 in example 9 has a polycarbonate substrate, 100 nm ZnS-SiO₂ layer, a 20 nm recording Ga₅Ge₅Sb₆₈Te₂₂ layer, a 40 nm ZnS-SiO₂ layer, a 250 nm reflective layer and a protective layer which is embraced by the language of claim 27 and is used at 10X recording velocities. [0464]. The addition of various materials including In, Ga, Si, Sn, Pb, Pd, Pt, Zn, Au, Ag, Zr, Hf, V, Nb, Ta, Cr, Co, Bi, N,O,S and rare earths as impurities to improve the performance and the reliability of the recording layer is disclosed [0073-0074]. Groove depths can be 30-45 nm. [0149]. The groove widths can be 0.4-0.6 microns [0153].

Example/embodiment 5 teaches a In₈Ag₅Sb₆₈Te₂₂ recording layer.

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To address other embodiment bounded by the claims, but not rendered obvious above, the examiner cites Nobukuni et al. EP 1056077 and holds that it would have been obvious to modify the media resulting from the combination of (Yasuda et al. '788 or Uno et al. '135), Ando et al. '543 and Hisotomi et al. WO 99/38168 by using other recording medium compositions and/or substrate thicknesses such as those disclosed by Nobukuni et al. EP 1056077, based upon the similar disclosures within Yasuda et al. '788. Further it would have been obvious to use other track widths and depths disclosed by Nobukuni et al. EP 1056077 with the smaller track pitches taught by Yasuda et al. '788 to increase the information content while maintaining a reasonable expectation of success of forming a useful optical recording medium based upon the disclosure of utility within Nobukuni et al. EP 1056077.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Martin J Angebranndt
Primary Examiner
Art Unit 1795

10/29/2007